

PROFILE AND PATTERN OF MEDICO LEGAL CASES ATTENDING

TERTIARY CARE HOSPITAL IN NORTH INDIA

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ABSTRACT

Aim

To describe various types of medico-legal cases with respect to various demographic profiles and other parameters attending a tertiary care institute.

Material and Methods: This is a prospective study in which 1136 medico-legal cases were studied. These cases attended the tertiary care institute from 1st Jan. 2014 to 30th June 2014 & the information was collected with respect to their demographic profile included age, sex distribution, type of injury and time of occurrence of various injuries. Data was analyzed statistically using SPSS version 18.

Results: Out of 1136 cases studied, 841 (74.03%) were males and 295 (25.97%) were females. Majority of patients were between 21-30 years of age (28.3%) followed by 11-20 years and 31-40 years age group. RTA constituted majority of the cases (48.08%) followed by assault (30.63%) and poisoning (9.24%) The peak time of the incidences was during 12.01 pm- 4 pm.

Conclusion: To draw public attention and awareness towards medico legal emergencies and sensitize the doctors about handling of these cases.

KEYWORDS: Medico Legal, Road Traffic Accidents, Injury, Burn, Assault, Poisoning

INTRODUCTION

Medico legal cases constitute a considerable segment of emergencies brought to Emergency Medicine department of a Tertiary Care Hospitals. Therefore apart from medical emergencies the doctor needs to be sensitive about medico legal cases which constitute a substantial proportion and their exhaustive documentation is mandatory⁽¹⁾ A medico-legal case is a case of injury or illness where the attending doctor, after eliciting history and examining the patient, thinks that some investigation by law enforcement agencies is essential to establish and fix responsibility for the case in accordance with the law of the land⁽²⁾. Injury is defined under section 44 IPC as “any harm whatever illegally caused to any person, in body, mind, reputation or property”⁽³⁾. Common medico-legal cases include alleged cases of assault, accidental injuries, burns, alcoholic intoxications, poisoning and also the cases of negligence by medical professionals.

Road traffic accidents have been increasing at an alarming rate throughout the world⁽⁴⁾. By the year 2020 it is estimated that in countries like India, mortality from injury will be more than those from communicable diseases. Despite this documentation, injuries are still not well recognized as major public health problem in this country⁽⁵⁾ Number of

studies has documented the magnitude and pattern of medico-legal cases in various parts of the world and also in neighboring India, yet scope of medico-legal problems differ by regions based on socio-economic status, cultural variations, performance of law enforcing bodies and level of social services in community.

Types of medico-legal cases presenting in emergency Medicine departments also highlight value system among individuals in the community. Thus, studying frequency and pattern of these cases will provide vital data for administrators, health officials, philanthropists, social workers, NGOs to devise strategies in order to reduce these incidences. Aim of existing study is to describe the demographic profile of medico-legal cases attending a Tertiary Care Hospital in North India.

MATERIALS AND METHODOLOGY

A Prospective study for a period of six months from 1st Jan. 2014 – 30 June 2014 was conducted in which 1136 medico-legal cases attending Emergency Medicine department of a tertiary care institute (Sheri- Kashmir Institute of Medical Sciences (SKIMS) Srinagar, J & K) were studied. Individuals of all age and gender were included and those with no medico legal perspective were excluded from study. A pre-tested structured proforma was used to collect the data regarding demographic profile and types of injuries. Information regarding gender, age, demography, mode of injury, time of occurrence was collected from the victim's attendants and police. Data was first manually transferred to the form followed by its entry in SPSS -18 for data editing and analysis. Formal permission was obtained from concerned Hospital authority and institutional ethical review committee to conduct this study.

RESULTS

Out of 1136 cases studied, 841(74.03%) were males and 295 (25.97%) were females. The rural victims constituted 809 (71.21%) and urban victims were 327 (28.79%). Road Traffic Accidents (RTA) constituted 48.06%, assault 30.63%, poisoning 9.24%, burns 3.08%, fall from height 2.81%, machine injury 1.05%, strangulation/hanging 0.18%, drowning 0.18% and Fire Arm Injury (FAI)/ Stone Pelting were 4.75%.

Among 841 males 51.72%, 31.51%, 4.40%, 2.97%, 2.10%, 1.19%, 0.24%, 0.12% and 5.71 % were road traffic accidents, assault, poisoning, burns, fall from height, machine injury, strangulation/hanging, drowning and others respectively. Among 295 females 37.63%, 28.14%, 23.05%, 3.39%, 4.74%, 0.68%, 0.34% and 2.03 % were road traffic accidents, assault, poisoning, burns, fall from height, machine injury, drowning and fire arm injury/ stone pelting respectively.

Out of 156 urban victims 47.71%, 2.14%, 28.75%, 10.70%, 0.92%, 5.50% and % were road traffic accidents, fall from height, assault, poisoning, machine injuries, burns and other respectively. Out of 390 rural 48.21%, 3.09%, 31.40%, 8.65%, 1.11%, 0.25%, 2.10%, 0.25% and 4.94% were road traffic accidents, fall from height, assault, poisoning, machine injuries, drowning, burns, strangulation/hanging and fire arm injury/ stone pelting respectively. (Table 1)

Table 1: Gender, Demographic Profile and Mode of Injury

Mode of Injury	Gender		Demographic Profile		Total	
	Male n (%)	Female n (%)	Urban n %	Rural n %	n %	
Road Traffic Accidents	435 (51.72%)	111 (37.63%)	156 (47.71%)	390 (48.21%)	546 (48.06%)	
Assaults	265 (31.51%)	83 (28.14%)	94 (28.75%)	254 (31.40%)	348 (30.63%)	
Poisoning	73 (4.40%)	68 (23.05%)	35 (10.70%)	70 (8.65%)	105 (9.24%)	

Table 1: Contd.,					
Burns	25 (2.97%)	10 (3.39%)	18 (5.50%)	17 (2.10%)	35 (3.08%)
Fall from Height	18 (2.14%)	14 (4.74%)	07 (2.14%)	25 (3.01%)	32 (2.82%)
Machine Injury	10 (1.19%)	02 (0.68%)	03 (0.92%)	09 (1.11%)	12 (1.06%)
Strangulation and Hanging	02 (0.24%)	Nil	Nil	02 (0.25%)	02 (0.18%)
Drowning	01 (0.12%)	01 (0.34%)	Nil	02 (0.25%)	02 (0.18%)
Fire Arm Injury/ Stone Pelting	48 (5.71%)	06 (2.03%)	14 (4.28%)	40 (4.94%)	54 (4.75%)
Total	841 (74.03%)	295 (25.97%)	327 (28.79%)	809 (71.21%)	1136 (100%)

Among the total study population 15.67%, 29.49 %, 27.29 % and 27.55 % occurred at 06.01 am to 12.00 pm, 12.01 pm to 04.00 pm, 04.01 pm to 08.00 pm and 8.01 pm to 06.00 am respectively.

Out of 546 road traffic accidents received 17.95%, 27.29 %, 27.29% and 27.47% occurred at 06.01 am to 12.00 pm, 12.01 pm to 04.00 pm, 04.01 pm to 08.00 pm and 8.01 pm to 06.00 am respectively.

Among 32 victims of fall from height studied 25%, 50%, 12.50% and 12.50% occurred at 06.01 am to 12.00 pm, 12.01 pm to 04.00 pm, 04.01 pm to 08.00 pm and 8.01 pm to 06.00 am respectively. Out of 348 assaults 14.08%, 31.61 % 21.84% and 32.47% occurred at 06.01 am to 12.00 pm, 12.01 pm to 04.00 pm, 04.01 pm to 08.00 pm and 8.01 pm to 06.00 am respectively.

Out of 105 poisoning cases 14.29%, 32.38 %, 28.57 % and 24.76% occurred at 06.01 am to 12.00 pm, 12.01 pm to 04.00 pm, 04.01 pm to 08.00 pm and 8.01 pm to 06.00 am respectively.

Out of 12 machine injuries 66.66%, 33.33% and 0 % occurred at 12.01 pm to 04.00 pm and 04.01 pm to 08.00 pm respectively.

Out of 02 drowning cases one occurred at 04.01 pm to 08.00 pm and another 8.01 pm to 06.00 am.

Out of 35 burns received 8.57%, 17.14%, 68.57% and 5.72% occurred at 06.01 am to 12.00 pm, 12.01 pm to 04.00 pm, 04.01 pm to 08.00 pm and 8.01 pm to 06.00 am respectively.

Of 2 cases of strangulation/ hanging one occurred at 12.01 pm to 04.00 pm and another at 04.01 pm to 08.00 pm.

Out of 54 cases of fire arm injury/ stone pelting received 9.26%, 20.37%, 38.89% and 31.48% occurred at 06.01 am to 12.00 pm, 12.01 pm to 04.00 pm, 04.01 pm to 08.00 pm and 8.01 pm to 06.00 am respectively. (**Table 2**)

Among the study population of 1136 victims, 8.6%, 20.5%, 28.3%, 20.07%, 12.23%, 6.33%, 2.20%, 1.23% and 0.44% of the victims fall in the age group of 0-10 years, 11-20 years, 21-30 years, 31-40 years, 41-50 years, 51-60 years, 61-70 years, 71-80 years and above 80 years respectively. Out of total of 841 males studied, majority of them were in the age group of 21-30 years i.e. 31.04% and out of 295 females studied, majority were in the age group of 11-20 years i.e. 27.45 %.(**Table 3**)

Table 2: Peak Time of Occurrence Wise Distribution of Mode of Injury

Time of Occurrence	RTA	FFH	Assault	Poisoning	Machine Injury	Drowning	Burns	Strangulation /Hanging	FAI/ Stone Pelting	Total
6.01a.m -12 pm	98(17.95%)	8(25%)	49 (14.08%)	15 (14.29%)	Nil	Nil	3(8.57%)	Nil	5 (9.26%)	178 (15.67)
12.01p m-4 pm	149(27.29%)	16 (50%)	110 (31.61%)	34 (32.38%)	8(66.66 %)	Nil	6 (17.14%)	1 (50%)	11 (20.37%)	335 (29.49)
4.01pm-8p m	149(27.29%)	4 (12.5%)	76 (21.84%)	30 (28.57%)	4(33.33 %)	1 (50%)	24 (68.57%)	1 (50%)	21 (38.89%)	310 (27.29)
8.01pm-6am	150(27.47%)	4 (12.5%)	113 (32.47%)	26 (24.76%)	Nil	1(50%)	2 (5.72%)	Nil	17 (31.48%)	313 (27.55)
Total	546	32	348	105	12	2	35	2	54	1136

Table 3: Distribution of Cases According to Age and Sex

Age in Years	Males	Females	Total (%)
0-10	57 (6.77%)	41 (13.90%)	98 (8.60%)
11-20	152(18.07%)	81 (27.45%)	233(20.50%)
21-30	261(31.04%)	61 (20.68%)	322(28.30%)
31-40	168 (19.97%)	60 (20.34%)	228(20.07%)
41-50	113 (13.44%)	26 (8.81%)	139(12.33%)
51-60	57 (6.78%)	15 (5.09%)	72 (6.33%)
61-70	20(2.38%)	5 (1.69%)	25 (2.21%)
71-80	10(1.19%)	4 (1.36%)	14 (1.23%)
>80	3(0.36%)	2 (0.68%)	5 (0.44%)
Total	841	295	1136

In our study 1136 medico legal cases were received from 15 districts of Jammu and Kashmir, out of which 20.07%, 14.44%, 9.42%, 8.89%, 8.71%, 8.71%, 8.54%, 8.54%, 5.98%, 5.02%, 1.14%, 0.18%, 0.18%, 0.09% and 0.09% were from district Srinagar, Baramulla, Budgam, Kupwara, Pulwama, Ganderbal, Anantnag, Bandipora, Shopian, Kulgam, Ramban, Udhampur, Rajouri, Poonch and Jammu respectively.

In district Srinagar 51.75%, 26.32%, 9.21%, 6.14%, 1, 75%, 0.88% and 3.95% cases were RTA, assault, poisoning, burns, and fall from height, machine injury, and fire arm injury / stone pelting respectively. In district Ganderbal 38.38%, 34.34%, 14.14%, 3.04%, 3.03%, 1.01% and 5.05% were RTA, assault, poisoning, burns, fall from height, machine injury, hanging/strangulation, drowning and fire arm injury/ stone pelting respectively. In district Baramulla 51.22%, 26.83%, 10.36%, 1.83%, 2.44%, 1.22% and 6.10% were RTA, assault, poisoning, burns, fall from height, machine injury, and fire arm injury/ stone pelting respectively. In district Bandipora 43.30%, 42.27%, 4.12%, 3.09%, 2.06%, 1.04% and 4.12% were RTA, assault, poisoning, burns, fall from height, drowning and fire arm injury/ stone pelting respectively. In district Anantnag 47.42%, 30.93%, 10.31%, 2.06%, 3.09%, 1.04% and 5.15% were RTA, assault, poisoning, burns, fall from height, machine injury, and fire arm injury/ stone pelting respectively. In district Pulwama 45.45%, 38.38%, 6.06%, 1.01%, 3.03%, 2.02% and 4.04% RTA, assault, poisoning, burns, fall from height, machine injury, and fire arm injury/ stone pelting respectively. In district Kupwara 38.61%, 28.72%, 20.79%, 2.97%, 1.98%, 0.99% and 5.94% RTA, assault, poisoning, burns, fall from height, hanging/strangulation and fire arm injury/ stone pelting respectively. In district Budgam 44.86%, 33.64%, 3.74%, 2.81%, 8.41%, 1.87% and 4.67% RTA, assault, poisoning, burns, fall from height, machine injury and fire arm injury/ stone pelting respectively. In district Shopian 55.88%, 27.94%, 7.35%, 1.47%, 1.47%, 1.47% and 4.42% RTA, assault, poisoning, burns, fall from height, machine injury and fire arm

injury/ stone pelting respectively. In district Kulgam 61.41%, 24.57%, 5.27%, 1.75%, 1.75%, 1.75%, 1.75% and 1.75% RTA, assault, poisoning, burns, machine injury, hanging/strangulation, drowning and fire arm injury/ stone pelting respectively. Out of two cases received from district Udhampur one was RTA and one was assault. Out of two cases received from district Rajouri one was RTA and one falls in the category of fire arm injury/ stone pelting. In district Ramban 76.93%, 15.38%, 7.69% were RTA's, assault and fall from height respectively. Only one case each was registered from Poonch and Jammu district which fall under the category of fire arm injury/ stone pelting and RTA respectively.

(Table 4)

Table 4: District Wise Distribution of Type of Medico Legal Cases

District	RTA	Assault	Poisoning	Burns	FFHZ	Machine Injury	Strangulation/Hanging	Drowning	FAI/ Stone Pelting	Total
Srinagar	118 (51.75%)	60 (26.32%)	21 (9.21%)	14 (6.14%)	04 (1.75%)	02 (0.88%)	-	-	09 (3.95%)	228
Ganderbal	38 (38.38%)	34 (34.34%)	14 (14.14%)	04 (4.04%)	03 (3.03%)	01 (1.01%)	-	-	05 (5.05)	99
Baramulla	84 (51.22%)	44 (26.83%)	17 (10.36%)	03 (1.83%)	04 (2.44%)	02 (1.22%)	-	-	10 (6.10%)	164
Bandipora	42 (43.30%)	41 (42.27%)	04 (4.12%)	03 (3.09%)	02 (2.06%)	-	-	01 (1.04%)	04 (4.12%)	97
Anantnag	46 (47.42%)	30 (30.93%)	10 (10.31%)	02 (2.06%)	03 (3.09%)	01 (1.04%)	-	-	05 (5.15%)	97
Pulwama	45 (45.45%)	38 (38.38%)	06 (6.06%)	01 (1.01%)	03 (3.03%)	01 (1.01%)	-	-	04 (4.04%)	99
Kupwara	39 (38.61%)	29 (28.72%)	21 (20.79%)	03 (2.97%)	02 (1.98%)	-	01 (0.99%)	-	06 (5.94%)	101
Budgam	48 (44.86%)	36 (33.64%)	04 (3.74%)	03 (2.81%)	09 (8.41%)	02 (1.87%)	-	-	05 (4.67%)	107
Shopian	38 (55.88%)	19 (27.94%)	05 (7.35%)	01 (1.47%)	01 (1.47%)	01 (1.47%)	-	-	03 (4.42%)	68
Kulgam	35 (61.41%)	14 (24.57%)	03 (5.27%)	01 (1.75%)	-	01 (1.75%)	01 (1.75%)	01 (1.75%)	01 (1.75%)	57
Udhampur	01 (50%)	01 (50%)	-	-	-	-	-	-	-	02
Rajouri	01 (50%)	-	-	-	-	-	-	-	01 (50%)	02
Banihal	10 (76.93%)	02 (15.38%)	-	-	01 (7.69%)	-	-	-	-	13
Poonch	-	-	-	-	-	-	-	-	01 (100%)	01
Jammu	01 (100%)	-	-	-	-	-	-	-	-	01
Total	546	348	105	35	32	12	02	02	54	1136

DISCUSSIONS

In the present study 1136 medico-legal cases were admitted in emergency during the period of 6 months (January 1, 2014 to 30 June -2014). Road traffic accidents comprised of maximum number 546 (48.06%) followed by assault 348 (30.63%) and poisoning 105 (9.24%). Harish et al. ⁽⁶⁾ and Agarwal et al ⁽⁷⁾ reported that road traffic accidents were the commonest types of medico-legal cases in Indian cities of Bangalore and Patiala respectively, followed by blunt injuries and poisoning. On the other hand, in Quetta Baluchistan, most frequently reported cases were blunt injuries resulting from street fighting followed by road traffic accidents. Interestingly, in both these countries, there was a male predominance and these events occurred mostly in younger age groups (20-29 years). The factors responsible for increase in RTAs probably include human factors, vehicular and various road factors, violation or lack of observance of traffic rules.

There is overwhelming majority of the male victim (74.03%), consistent with other studies ^[6-11]. It is due to greater male exposure on roads, construction area and farms.

In the present study, the cases of poisoning are more common among females in comparison to the males. These findings are similar to the findings of other studies ⁽¹⁵⁾. It may be due to more exposure, accessibility as well as risk of domestic violence.

The most common age group affected was 21-30 years, included 322 (28.3%) cases followed by 11-20 years age group included 233 cases (20.5%) & 31-40 years (20.07%). This is consistent with the studies available from India and other countries ^[6-8, 10, 14]. This age group is the most active phase of life, physically and socially and hence outnumbers the other age groups. The majority of cases comprised of rural population 809 (71.21%) as compared to the urban 327 (28.79%). These results are similar to earlier studies ^(1,13) as rural populace has to travel longer distances to reach urban

centers and the damaged road conditions makes the travelers susceptible for accidents. Also, the poisonous cases are seen more in rural areas as majority of these people are involved in agricultural sector & insecticide poisons are freely available. Assault cases are also more in rural as mostly disputes related to possession of land property are seen due to unevenly demarcated lands

The peak time of occurrence of most of RTAs coincide with the time when there is maximum human activity on roads and ply of most of the vehicles on the roads.

Highest numbers of cases (20.07%) were received from district Srinagar which can be contributed to the fact that the tertiary care institute where the study was conducted is located in Srinagar district and it is the nearest referral center for the said district. Lowest numbers of cases were received from district Poonch (0.09%) and Jammu (0.09%) which can be contributed to the fact that both the districts are about 300 kilometers away from the area of study and very less patients are referred to SKIMS from these districts

CONCLUSIONS

The present study shows that majority of the victims were males. Urban population was predominant. Peak time of occurrence was between 12.01 pm to 4.00 pm.

Majority of the victims represented from younger age group (21-30 years). Maximum Medico legal cases received were due to Road Traffic Accidents and these cases continue to be a growing menace, incurring heavy loss of valuable man-power and human resources along with a corresponding drain of potential economic growth.

Thus, studying frequency and pattern of these cases provides a vital data for administrators, health officials, philanthropists, social workers, NGOs to devise strategies in order to reduce these incidences. The basic principles of injury prevention are education of masses & uniform enforcement of law & order. In our opinion, the above considerations certainly are result oriented and will be extremely helpful to manage the health of all communities. On the other hand, the doctor's needs to be better trained about handling these cases and a proper medico legal cell to be established manned by concerned experts and make such cell functional round the clock in order to handle such cases.

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